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**PHASE I PRAIRIE RESTORATION
CONTROLLED BURN ACTIVITIES SUMMARY
Burn Date: April 5, 2012**

BLACKWELL FOREST PRESERVE

MWH File No. 1007333

Prepared for:

**Forest Preserve District
DuPage County, Illinois**

Prepared by:



MWH

BUILDING A BETTER WORLD

**MWH Americas, Inc.
175 West Jackson Boulevard, Suite 1900
Chicago, Illinois 60604**

June 2012

**PHASE I PRAIRIE RESTORATION
CONTROLLED BURN ACTIVITIES SUMMARY**

Burn Date: April 5, 2012

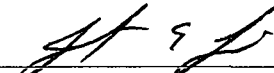
BLACKWELL FOREST PRESERVE

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DuPage County, Illinois**

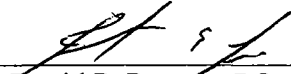
Prepared by:


Justin E. Finger
Geologist

6/18/12

Date

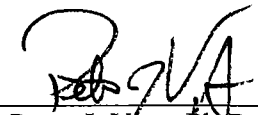
Reviewed by:

 FOR
David P. Powers, PG
Project Manager

6/18/12

Date

Approved by:


Peter J. Vagt, Ph.D., CPG
Project Coordinator

6/18/12
Date

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ACRONYMS AND ABBREVIATIONS

AOC	Administrative Order by Consent
CDF	Conservation Design Forum
District	Forest Preserve District of DuPage County
FSP	Field Sampling Plan
IEPA	Illinois Environmental Protection Agency
LCS	Leachate Collection System
LFG	Landfill Gas
MWH	MWH Americas, Inc.
NPL	National Priority List
O&M	Operations and Maintenance
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
UAO	Unilateral Administrative Order
U.S. EPA	United States Environmental Protection Agency

1.0 INTRODUCTION

Following the remedial construction activities at the Blackwell Forest Preserve, the Forest Preserve District of DuPage County (District) has been implementing processes to develop a natural prairie biome on the landfill. Prairie fires were a natural occurrence across Illinois in pre-historic times and a key component of restoring the prairie environment is to periodically conduct controlled burns. Early spring, when previous year's vegetation has dried and new vegetation is just beginning to return, is the optimal time for conducting such burns. The goal is to burn each prairie area every year or at least every other year.

The first prairie burn was conducted on the Blackwell Landfill on April 20, 2004. Including 2004, the District has completed eight annual prairie burns at the Site. The eighth burn on the Blackwell Landfill was conducted on April 5, 2012. On behalf of the District, MWH Americas, Inc. (MWH) has compiled this report to provide a summary of the activities conducted prior to, during, and after the 2012 prairie burn.

1.1 REPORT PRESENTATION

The report is presented in the following four sections:

- This section, Section 1.0, presents the background regulatory information on the Blackwell Landfill;
- Section 2.0 provides a history of the prairie restoration activities conducted on the Blackwell Landfill;
- Section 3.0 describes the activities conducted before, during, and after the controlled burn on April 5, 2012; and
- The final section, Section 4.0, provides a summary of activities and recommendations for future controlled burn events to be conducted on the Blackwell Landfill.

1.2 BACKGROUND

The Blackwell Landfill is located within the Blackwell Forest Preserve approximately six miles southwest of downtown Wheaton, Illinois in Section 26, Township 39 North, Range 9 East, DuPage County, Illinois (Figure 1). The Blackwell Forest Preserve encompasses 1,200 acres of woodlands, grasslands, wetlands and lakes, with the landfill covering approximately 40 acres in the central part of the preserve (Figure 2). Figure 3 is an aerial photograph showing the Blackwell Forest Preserve, with the lakes and the landfill shown within the suburban setting.

1.2.1 Landfill Construction

The Blackwell property was purchased by the District in 1960 with the intent to create a large hill that could be used by the public for recreational purposes. The District began construction of the landfill in 1965 and accepted the final load of refuse in 1973.

Plans for the landfill, as well as photographs taken during the landfill construction, and interviews with the District employees provided an understanding of the landfill construction. The landfill was laid out over an approximate 35-acre area. It was constructed on top of the existing ground surface, rather than being excavated into the ground. The first step was to put down a two-foot layer of clay to act as the basal liner. A series of 8 to 9 foot high berms was laid out to define eight major disposal areas, each three to five acres in size. These initial cells were then filled with a multitude of small refuse cells. Five to ten scavenger trucks would come in each working day and deposit refuse. In general, the refuse would be covered with available soil at the end of each day.

By the time final contouring and landscaping was completed in 1975, forty to sixty feet of clay had been placed on top of refuse on the southwest side of the landfill to create Mount Hoy. Mount Hoy was finished at the final target elevation of approximately 840 feet above mean sea level, approximately 140 feet above the surrounding natural topography. Other areas of the landfill were covered with 2 to 15 feet of predominantly clay cover. In some areas, a vegetative cover of varying sand, gravel and clay composition was placed. A final layer of clayey topsoil (minimum of 4 to 6 inches thick) was installed and vegetated.

1.2.2 Regulatory History

In March 1986, the United States Environmental Protection Agency (U.S. EPA) evaluated the Site using the Hazard Ranking System for National Priorities List (NPL) listing. The Site was proposed for inclusion on the NPL in the Federal Register, Volume 53, Number 122, dated June 24, 1988. The Site received final listing on the NPL in the Federal Register, Volume 55, Number 35, dated February 21, 1990.

Subsequent to the final listing on the NPL, a Remedial Investigation/Feasibility Study (RI/FS) was performed at the landfill. The Final RI Report (Warzyn, 1994) was submitted to the U.S. EPA in 1994, while the Draft FS Report (Montgomery Watson, 1995) was submitted in 1995.

On March 7, 1996, the U.S. EPA and the District agreed to an Administrative Order by Consent (AOC), Docket No. V-W-'96-C-341, which specified response actions that the District would conduct at the Site. These response actions have been completed, or are part of ongoing operations and maintenance (O&M).

On September 30, 1998, the U.S. EPA issued the Record of Decision (ROD) for the Blackwell Landfill. The ROD requires long term O&M of the previously completed response actions, long-term monitoring, monitored natural attenuation of groundwater, and possible augmentation of the leachate collection system (LCS) and landfill gas (LFG) venting system.

On April 9, 1999, the U.S. EPA issued a Unilateral Administrative Order (UAO), Docket No. V-W-'99-C-541 to the District. This UAO directed the District to perform the selected remedial action described in the ROD and set forth the requirements for implementation of the remedial action.

2.0 PRAIRIE RESTORATION HISTORY

Restoration strategies were developed for the vegetation on the Blackwell Landfill to fulfill the AOC requirement, which stated that:

“the FPD will develop a rationale for acceptable cover thickness in combination with specific tree types, and a tree management program that will allow the maintenance of trees on the landfill in safe areas, without threatening the integrity of the cover over refuse” (*Item II.3.A of the Statement of Work attached to the Administrative Order by Consent*).

In response to this requirement, the District submitted the Final Arboreal Study Report for the Blackwell Landfill (Montgomery Watson, 2000a). This report presented a detailed discussion of vegetation growth on landfills, included both trees and native grasses, and concluded that tree and native grass roots would not compromise the integrity of a landfill cover. Instead, the tree and grass roots would adapt to site-specific conditions on a landfill, and would spread laterally when encountering an underlying compacted clay layer. The study also concluded that a minimum of two feet of vegetative soil over a compacted clay cover was sufficient to safely support tree growth on the Blackwell Landfill.

During the spring and summer of 2001, as part of the *Revised Phase I Restoration Plan* (Montgomery Watson and Conservation Design Forum [CDF], 2000), the District began voluntary conversion of vegetation on the Blackwell Landfill from Eurasian grasses to native Illinois grasses and prairie cover. This conversion was performed not only to enhance the recreational and aesthetic value of the Site, but also to provide a superior vegetative cover for the landfill surface (i.e., prairie species develop more extensive root systems than shallow-rooted Eurasian grasses, thus minimizing the potential for surface soil erosion). Site preparation activities, including selective tree removal, began in May 2001 and prairie seed installation occurred in May and June 2001.

Newly seeded areas of the landfill were watered and mowed periodically during the summer of 2001 and again during the summer of 2002. The results of the prairie restoration activities are summarized in annual Restoration Monitoring Reports (Conservation Design Forum, 2002a, 2002b, 2003, 2004, 2005, 2007, 2008, 2009, 2010, 2011, and 2012). These reports conclude that prairie restoration is progressing as expected and should continue the maturation process over the coming years.

As stated in the Phase I Restoration Plan, controlled burning is a fundamental and commonly used management tool that should be conducted on a regular basis. The controlled burn replicates a natural process that is essential to the long-term survival of the prairie landscape and may be conducted on a one to three year schedule based upon the progress of the restoration, and weather conditions during spring.

The first controlled burn was conducted during the spring of 2004. Including 2004, the District has completed eight annual prairie burns at the Site. The dates of the controlled burns conducted at the Site are as follows:

- 2004; April 20, 2004
- 2005; April 14, 2005
- 2007; April 09, 2007
- 2008; April 15, 2008
- 2009; April 23, 2009
- 2010; April 15, 2010
- 2011; April 21, 2011
- 2012; April 5, 2012

A prairie burn was scheduled for the spring of 2006, however conditions were not conducive for an effective and safe burn on the scheduled day and so it was cancelled.

3.0 2012 PRAIRIE BURN ACTIVITIES

In accordance with the requirements of the U.S. EPA-approved Phase I Restoration Plan, several phases of coordination activities were conducted prior to the April 5, 2012 burn. The following sections describe planning and coordination activities conducted prior to and on the morning of the burn as well as the post-burn monitoring conducted by the District, MWH, and CDF personnel.

3.1 PRE-BURN COORDINATION ACTIVITIES

The pre-burn coordination activities included:

- The Illinois Environmental Protection Agency (IEPA) issued an Open Burning Permit on October 17, 2011. A copy of the IEPA Open Burning Permit is provided in Appendix A.
- The District mailed community notification postcards to a Blackwell Landfill-specific prairie burn notification list in the fall of 2011. A copy of the notification post card is provided in Appendix B.
- The District staff scheduled to conduct the burn reviewed the internal Safety and Health Plan prior to April 5, 2012. A copy of the Plan is included in Appendix C.
- The previously approved Field Sampling Plan (FSP) addendum for post-burn monitoring updated in 2012 was distributed to the District and MWH personnel (Appendix D).
- MWH sent a letter to the Agencies on March 7, 2012 notifying them of the intention to conduct a controlled prairie burn in the spring of 2012. The Phase I Restoration Plan requires that the Agencies be notified 14 days in advance of the burn event. This letter met that requirement. The exact date could not be provided since the decision to proceed or postpone the burn is made 24 to 48 hours prior to and then again on the morning of the scheduled burn.
- Burn Plan Guidelines developed for the previous Blackwell Prairie Burns were circulated to the District and MWH field team (Appendix E).
- MWH called U.S. EPA and IEPA on Wednesday, April 4, 2012 and informed them of the plan to conduct the burn on April 5, 2012.

3.2 DAY OF BURN ACTIVITIES

Several activities were conducted prior to the burn on April 5, 2012, including:

- Representatives of the District and MWH shut down the LCS and LFG venting systems the morning of the burn, thus meeting the Burn Plan requirement that the remedial systems be shut down a minimum of ten minutes prior to the burn;
- A tailgate safety and orientation meeting was conducted on site and attended by representatives of MWH and the District (Environmental Services and Grounds and Resources Divisions). MWH and the District Burn Coordinator chaired the meeting.
- A local weather report was obtained at least one hour prior to the burn. Weather conditions were within ranges set forth in the Burn Plan Guidelines. Weather information and other burn day documentation are provided in Appendix F.

The burn began at 9:30 a.m. at the top of Mount Hoy on the eastern slope south of the access road. Once that area was completed, the burn was conducted on the northern slope of Mount Hoy and continued on to the northeast. Finally, the northern flat area was burned. Approximately two-thirds of the prairie cover on the landfill was burned to ash. A series of photographs taken during the burn is provided as Appendix G. The approximate areas that were burned are shown on Figure 4.

3.3 POST-BURN MONITORING

After the Burn Coordinator deemed the burn complete, MWH and the District personnel inspected the landfill's remedial components and appurtenances utilizing the procedures outlined in FSP Addendum 8. Locations of the LFG and LCS vents and manholes are shown on Figure 5. Neither MWH nor District personnel noted visible damage to the landfill remedial components or appurtenances (Table 1). Therefore, all LFG and LCS components were deemed undamaged and the LCS and LFG systems were started up again. Conditions of the vents and vent covers were documented by photographs, which are included in Appendix H.

Kenneth Johnson of CDF conducted an assessment of the controlled burn areas. His assessment is provided as Appendix I to this summary report and states that:

- The prescribed burn was done earlier in the season than in previous years. However, the unusually mild weather in March resulted in much of the Site being too green to support a fire. The prairie northwest of the toboggan run and the back slope of Mount Hoy were among the areas that would not support a fire.
- The eastern portions of the Site, as well as the prairie north of the toboggan run burned very well. Approximately two-thirds of the prairie landscape burned.
- The DuPage County Forest Preserve District burn crew, led by Mr. Herman Jensen performed a safe and professional job in completing the burn.

4.0 SUMMARY AND CONCLUSIONS

A controlled prairie burn was conducted at the Blackwell Landfill on April 5, 2012. The burn was performed by qualified personnel from the District and conducted in accordance with U.S. EPA-approved work plans and IEPA Open Burning Permit. There were no safety issues during this activity.

Approximately two-thirds of the entire landfill area was burned to ash, and this represents a good percentage of the restored prairie areas.

Post-burn monitoring confirmed that there was no damage to any of the landfill remedial components and appurtenances. Another prairie burn is recommended for early in spring, 2013.

5.0 REFERENCES

- Montgomery Watson, 2000a. Final Arboreal Study Report, Blackwell Landfill NPL Site, April 2000.
- Montgomery Watson and Conservation Design Forum, 2000. Revised Phase I Restoration Plan for the Revegetation of the Blackwell Landfill, December 2000.
- Conservation Design Forum, 2002a. First-Year Restoration Monitoring Report for the Blackwell Landfill Prairie Restoration, January 2002.
- Conservation Design Forum, 2002b. Second-Year Restoration Monitoring Report for the Blackwell Landfill Prairie Restoration, December 2002.
- Conservation Design Forum, 2003. Third-Year Restoration Monitoring Report for the Blackwell Landfill Prairie Restoration, December 2003.
- MWH Americas, Inc., 2004. Phase I Prairie Restoration Controlled Burn Activities Summary, June 2004.
- Conservation Design Forum, 2004. Fourth-Year Restoration Monitoring Report for the Blackwell Landfill Prairie Restoration, December 2004.
- MWH Americas, Inc., 2005. Phase I Prairie Restoration Controlled Burn Activities Summary, May 2005.
- Conservation Design Forum, 2005. Fifth-Year Restoration Monitoring Report for the Blackwell Landfill Prairie Restoration, December 2005.
- Conservation Design Forum, 2007. Sixth-Year Restoration Monitoring Report for the Blackwell Landfill Prairie Restoration, January 2007.
- MWH Americas, Inc., 2007. Phase I Prairie Restoration Controlled Burn Activities Summary, June 2007.
- Conservation Design Forum, 2008. Seventh-Year Restoration Monitoring Report for the Blackwell Landfill Prairie Restoration, January 2008.
- Conservation Design Forum, 2009. Eighth-Year Restoration Monitoring Report for the Blackwell Landfill Prairie Restoration, January 2009.
- Conservation Design Forum, 2010. Ninth-Year Restoration Monitoring Report for the Blackwell Landfill Prairie Restoration, January 2010.
- Conservation Design Forum, 2011. Tenth-Year Restoration Monitoring Report for the Blackwell Landfill Prairie Restoration, January 2011.
- Conservation Design Forum, 2012. Eleventh-Year Restoration Monitoring Report for the Blackwell Landfill Prairie Restoration, January 2012.

JEF/PJV

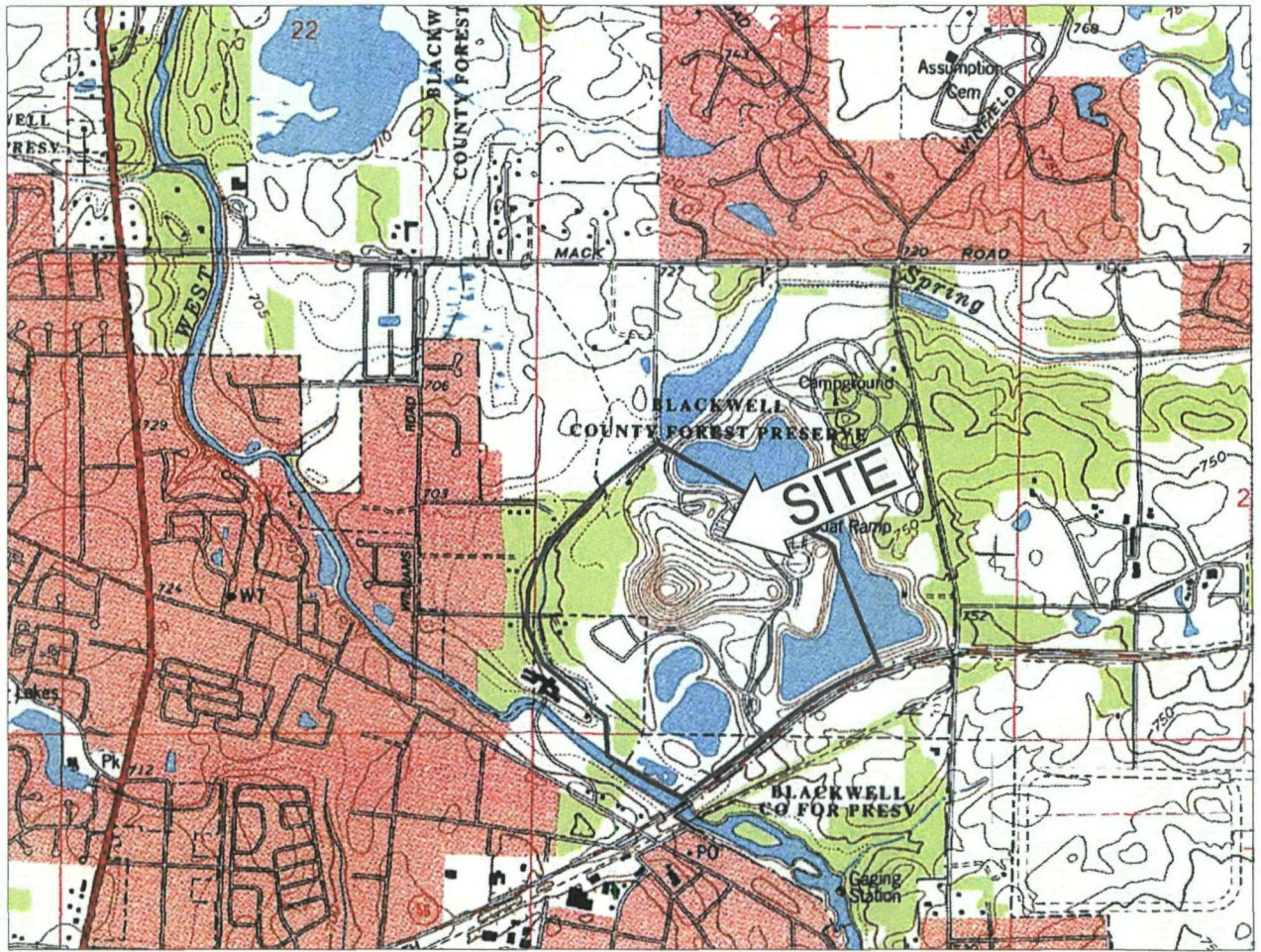
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TABLE

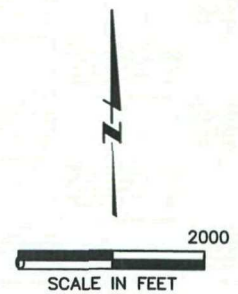
Table 1
Post-Prairie Burn Remedial Components Evaluation Form
Blackwell Landfill Site

VENT NUMBER	OBSERVATIONS
SV-1	No Damage Observed
SV-2	No Damage Observed
SV-4	No Damage Observed
SV-5	No Damage Observed
SV-6	No Damage Observed
SV-7	No Damage Observed
SV-8	No Damage Observed
SV-9	No Damage Observed
SV-11	No Damage Observed
SV-12	No Damage Observed
DV-3	No Damage Observed
DV-4	No Damage Observed
DV-5	No Damage Observed
DV-6	No Damage Observed
DV-7	No Damage Observed
DV-8	No Damage Observed
DV-9	No Damage Observed
DV-10	No Damage Observed
DV-11	No Damage Observed
DV-13	No Damage Observed
DV-14	No Damage Observed
DV-15	No Damage Observed
DV-16	No Damage Observed
DV-17	No Damage Observed
DV-18	No Damage Observed
EW-1	No Damage Observed
EW-1A	No Damage Observed
EW-2	No Damage Observed
EW-3	No Damage Observed
EW-4	No Damage Observed
EW-5	No Damage Observed
EW-6	No Damage Observed
EW-7	No Damage Observed
EW-8	No Damage Observed
Drip Legs	No Damage Observed
Manholes	No Damage Observed
LS 01	No Damage Observed
LS 03	No Damage Observed
SW Trench Vault	No Damage Observed

FIGURES



BASE MAP DEVELOPED FROM THE
NAPERVILLE, ILLINOIS 7.5 MINUTE
U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP
DATED: 1993



BLACKWELL LANDFILL NPL SITE
DUPAGE COUNTY, ILLINOIS

SITE LOCATION MAP

FIGURE

1



BLACKWELL LANDFILL NPL SITE
DU PAGE COUNTY, ILLINOIS

SITE FEATURES MAP

FIGURE
2



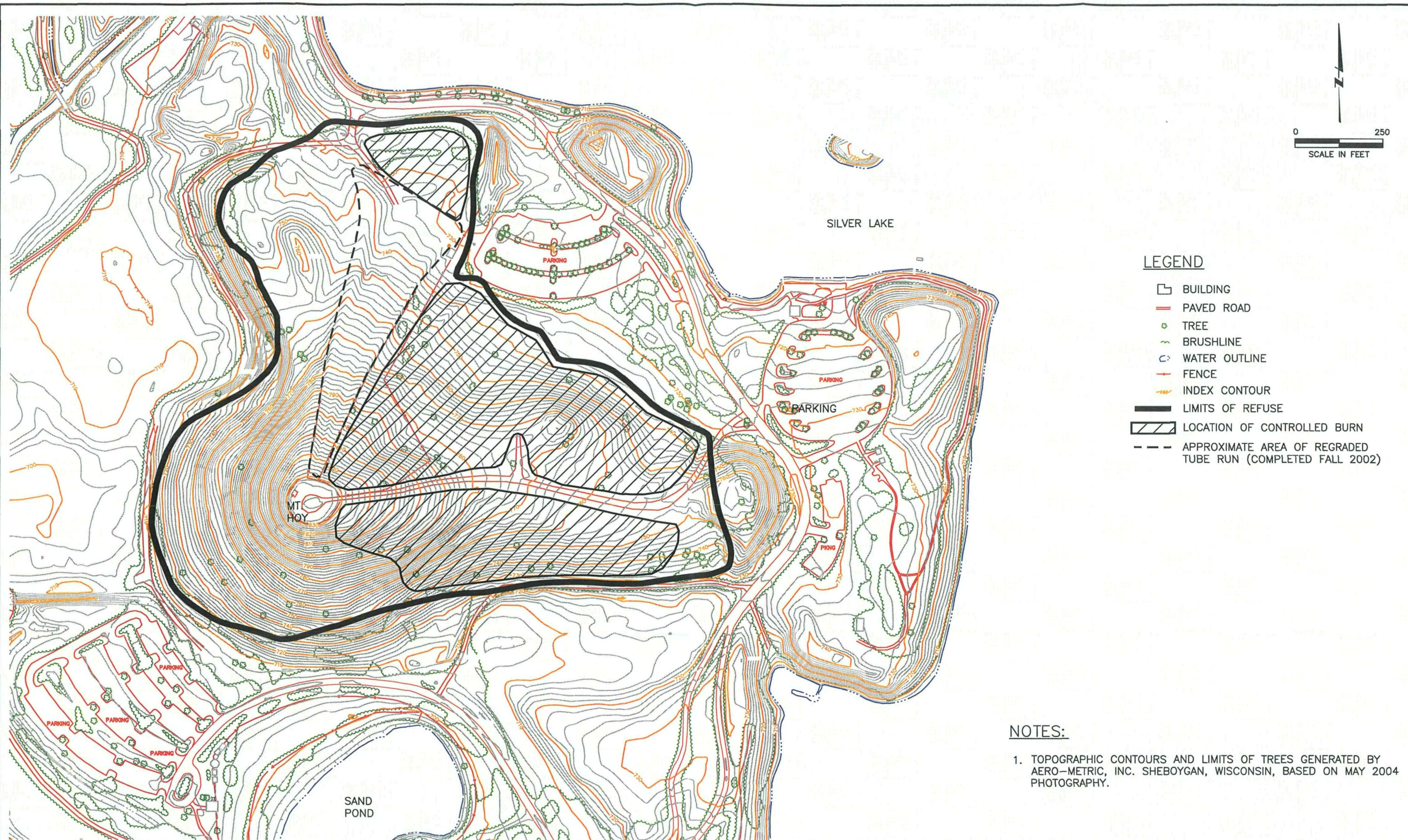
0 1000
(feet)



BLACKWELL LANDFILL NPL SITE
DUPAGE COUNTY, ILLINOIS

AERIAL PHOTOGRAPH
MAP

FIGURE
3



LEGEND

- BUILDING
- PAVED ROAD
- TREE
- BRUSHLINE
- WATER OUTLINE
- FENCE
- INDEX CONTOUR
- LIMITS OF REFUSE
- LOCATION OF CONTROLLED BURN
- APPROXIMATE AREA OF REGRADED TUBE RUN (COMPLETED FALL 2002)

NOTES:

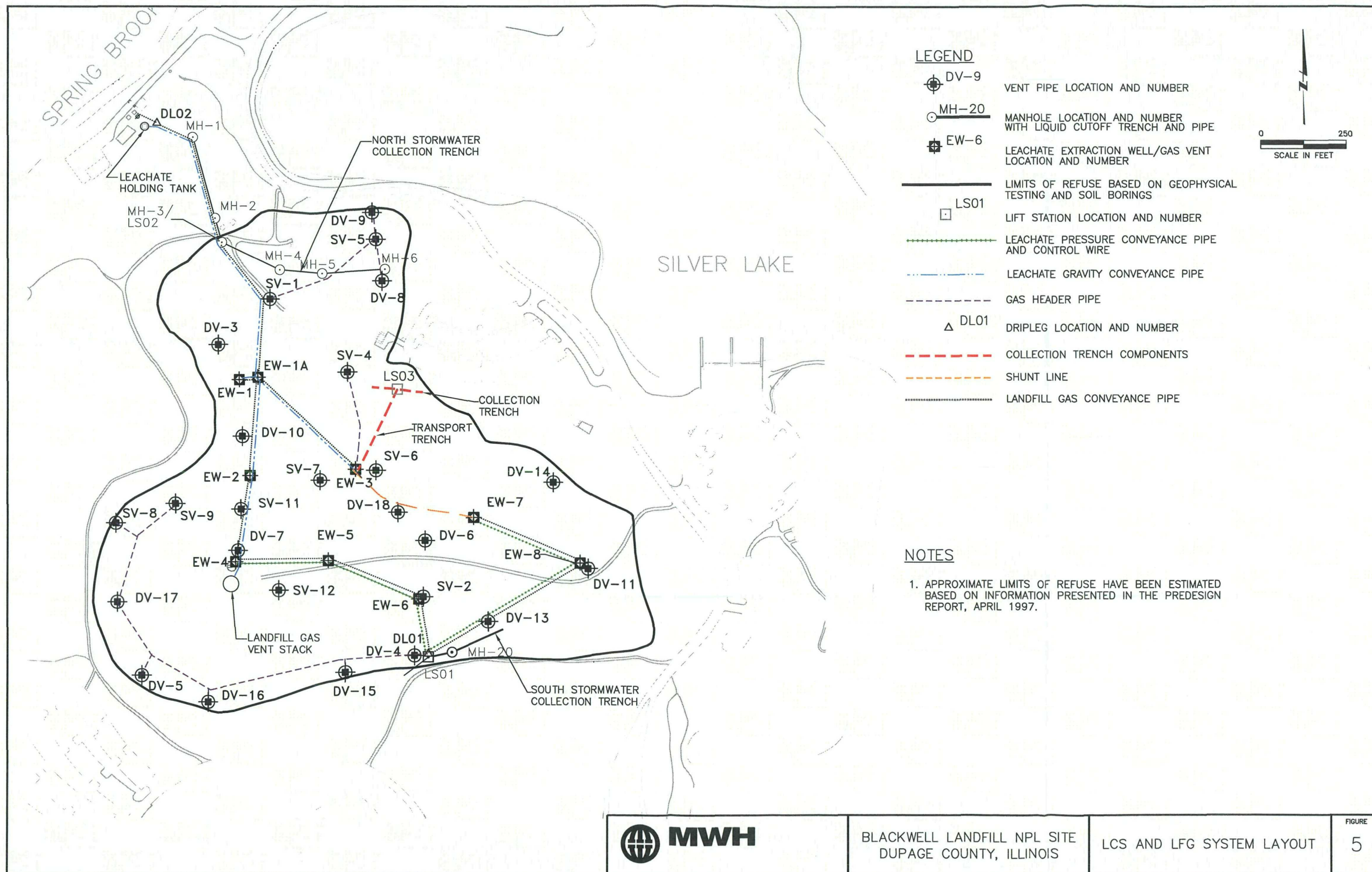
1. TOPOGRAPHIC CONTOURS AND LIMITS OF TREES GENERATED BY AERO-METRIC, INC. SHEBOYGAN, WISCONSIN, BASED ON MAY 2004 PHOTOGRAPHY.



BLACKWELL LANDFILL NPL SITE
DUPAGE COUNTY, ILLINOIS

LOCATION OF CONTROLLED BURN
CONDUCTED ON APRIL 5, 2012

FIGURE
4



BLACKWELL LANDFILL NPL SITE
DUPAGE COUNTY, ILLINOIS

LCS AND LFG SYSTEM LAYOUT

FIGURE
5

APPENDIX A

IEPA Open Burning Permit



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19506, SPRINGFIELD, ILLINOIS 62794-9506 - (217) 782-2113

PAT QUINN, GOVERNOR

LISA BONNETT, INTERIM DIRECTOR

217/782-2113

OPEN BURNING PERMIT

PERMITTEE

Forest Preserve District of DuPage County
Attn: Erik Neidy
3 South 580 Naperville Road
Wheaton, Illinois 60189-8761

Application Number: B1107195

I.D. Number: 043105

Date Issued: October 17, 2011

Date Received: July 28, 2011

Date Open Burning May Begin: One Day from Date Issued

Date Open Burning Must Cease: One Year from Date Issued

Open Burning of: Prairie/Savanna/Woodland/Wetland for Ecological Management

Location: See Attached - 48 Sites

County: DuPage

Permit is hereby granted to open burn the above-referenced material, subject to the standard conditions attached hereto and the following special conditions:

1. Issuance of this permit shall not exempt this open burning from applicable local restrictions.
2. Section 9(a) of the Environmental Protection Act is applicable to open burning, i.e., persons affected by such open burning may lodge complaints with the Environmental Protection Agency if the burning is injurious to human, plant, or animal life, to health, or to property, or unreasonably interferes with the enjoyment of life or property.
3. Burning shall take place only when wind is blowing away from roadways, residences, railroad tracks and populated areas.
4. Prior to each scheduled burn the Permittee shall notify residences and businesses that may be affected, of the intended open burning activity.
5. The Permittee shall notify and receive prior approval from the local fire protection district at least 24 hours prior to the actual burn.
6. Open burning is prohibited on "Orange AQI or Worse" or "Air Pollution" alert days. Information regarding alert status may be obtained by calling:

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For Cook County - 312-744-4365
For Lake, McHenry, Kane, DuPage and Will Counties - 708-865-6320
For Monroe, St. Clair, and Madison Counties - 314-645-5505
between May - September

Or

Check <http://www.epa.state.il.us/air/aqi/index.html> for the AQI website.

7. Any burning conducted after 4:00 PM CST or 5:00 PM DST is allowed when relative humidity levels are forecasted to remain below 75%. Relative humidity shall be monitored every 15 minutes during burning. All burning shall immediately cease if relative humidity rises above 75% or visibility conditions deteriorate.

If you have any questions on this permit, please call Floyd McKinney at the above number.



Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed:

10/17/11

ECB:FEM:jws

cc: Region 1

Attachment 1

Belleau Woods-70 acres	Big Woods-90 acres
Blackwell RC-325 acres	Churchill Woods-90 acres
Danada-250 acres	Dunham-400 acres
East Branch-85 acres	East Branch Riverway-80 acres
Egermann Woods-75 acres	Fischer Woods-110 acres
Fullersburg Woods-75 acres	Fullerton Park-40 acres
Greene Valley-530 acres	Hawk Hollow-200 acres
Herrick Lake-440 acres	Hickory Grove-30 acres
Hidden Lake-45 acres	James "Pate" Philip SP-300 acres
Lincoln Marsh-25 acres	Mallard Lake-5 acres
Maple Grove-65 acres	Mayslake-15 acres
McDowell Grove-30 acres	Meacham Grove-115 acres
Night Heron Marsh-60 acres	Oldfield Oaks-70 acres
Oak Meadows-25 acres	Pratts Wayne Woods-1500 acres
Salt Creek Greenway-30 acres	Salt Creek Marsh-65 acres
Salt Creek Park-35 acres	Songbird Slough-55 acres
Spring Creek Reservoir-40 acres	Springbrook Prairie-750 acres
St. James Farm-520 acres	Swift Prairie-20 acres
Timber Ridge-340 acres	Warrenville Grove-4 acres
Waterfall Glen-730 acres	Wayne Grove-40 acres
West Branch-70 acres	West Chicago Prairie-290 acres
West DuPage Woods-104 acres	Willowbrook-15 acres
Winfield Mounds-60 acres	Wood Dale Grove-35 acres
Wood Ridge-150 acres	York Woods-40 acres

APPENDIX B

Copy of Community Notification Post Card

Dear Forest Preserve Neighbor:

Since 1975, the Forest Preserve District of DuPage County has used prescription burns — also known as “controlled burns” — to clear weedy, nonnative vegetation and to help restore native woodlands, prairies and wetlands to their healthiest states. As a result, native plant and animal species are making a comeback.

Between late fall and early spring, the Forest Preserve District may conduct prescription burns in a forest preserve near you. The exact date and location will depend upon the weather. All prescription burns are conducted by trained land managers with permits from the Illinois Environmental Protection Agency and local fire departments. Local police departments, the DuPage County Sheriff's office, and local and adjacent fire departments are in close communication during the process.

The Forest Preserve District makes every effort to prevent any inconvenience to area residents. If you have a health condition that could be aggravated by the smoke, please return the postcard below. (If you have returned a similar card in the past, please do so again as cards are not retained from year to year.) Forest Preserve District staff will do their best to contact you on the day of the burn.

For more information on this program, call the Forest Preserve District's Office of Natural Resources at (630) 933-7227, or visit www.dupageforest.com. Thank you.

Place
Stamp
Here



Office of Natural Resources
Forest Preserve District of DuPage County
P.O. Box 5000
Wheaton, IL 60189-5000



Forest Preserve District of DuPage County
P.O. Box 5000
Wheaton, IL 60189-5000

PRSRT STD
U.S. Postage
PAID
Carol Stream, IL
Permit No. 96

Prescription Burn Correspondence

Please detach and mail by November 8.



Yes, I have an existing health condition that is sensitive to smoke
and would like the Forest Preserve District to contact me on the day
of the prescription burn.

Name

Daytime Phone Number

Nearest Forest Preserve

APPENDIX C

Safety and Health Plan for Prescribed Burn

**SAFETY AND HEALTH PLAN
for
PRESCRIPTION BURN**

**BLACKWELL LANDFILL NPL SITE
DUPAGE COUNTY, ILLINOIS**

Prepared by

Drew W. Bergenthal

INTRODUCTION

PURPOSE OF THE SITE-SPECIFIC SAFETY AND HEALTH PLAN

This Site-Specific Safety and Health Plan (SSHP) applies to activities that will be conducted in support of both current and potential future activities at the Blackwell Landfill Nation Priorities List (NPL) Site located in Warrenville, Illinois. It establishes general safety responsibilities, requirements, and procedures for the protection of personnel and to prevent and minimize personal injuries, illness and physical damage to equipment, supplies and property.

The evaluation of hazards, levels of protection, and procedures specified in this SSHP are based on the best information available during the writing of this SSHP. It is recognized that conditions may change during site activities; therefore, it is imperative that site conditions and safety controls be assessed continually by the Project Safety Officer (PSO) prior to and during the planned activities. When necessary, this SSHP shall be revised to provide safety controls for new hazards.

FPD must comply with requirements of this SSHP while working on the project. These requirements are minimum requirements and must be exceeded when necessary to ensure worker safety and the protection of property and equipment.

In addition, FPD is responsible to comply with health and safety procedures required by their organizations and owners. Where such safety and health requirements are more stringent than the procedures specified herein, they must be followed and shall supersede the requirements of this Plan.

MODIFYING THE SITE-SPECIFIC SAFETY AND HEALTH PLAN

This SSHP may be modified if it becomes evident to the PSO or others associated with this work that the provisions specified are not feasible or adequate to protect the health and safety of site personnel.

REPORTING UNSAFE CONDITIONS

In the event the any site worker or visitor observes conditions that expose themselves or other workers to hazards that are likely to cause harm, they must immediately report the hazard to their supervisor so that prompt corrective action can be taken. In cases of imminent danger, any person on site may stop an activity if s/he is aware that by not doing so would cause serious harm to a person, property, or equipment.

SITE LOCATION, DESCRIPTION AND DURATION

The Blackwell Landfill is located within the Blackwell Forest Preserve approximately six miles southwest of downtown Wheaton, Illinois in Section 26, Township 39 North, Range 9 East, DuPage County, Illinois. The Blackwell Forest Preserve encompasses 1,200 acres of woodlands, grasslands, wetlands and lakes, with the landfill covering approximately 40 acres in the central part of the Preserve.

The Blackwell Landfill is located adjacent to an abandoned gravel pit that was purchased by the Forest Preserve District of DuPage County (FPD) in 1960 with the intent to create a large hill that could be used by the public for recreational purposes. The FPD began construction of the landfill in 1965 and accepted the final load of refuse in 1973.

By the time final contouring and landscaping was completed in 1975, forty to sixty feet of clay had been placed on top of refuse on the southwest side of the landfill to create Mount Hoy. Mount Hoy was finished at the final target elevation of approximately 840 feet above mean sea level, approximately 140 feet above the surrounding natural topography. Other areas of the landfill were covered with two to fifteen feet of predominantly clay cover. In some areas, a vegetative cover of varying sand, gravel and clay composition was placed. A final layer of clayey topsoil (minimum of four to six inches thick) was installed and vegetated.

The Blackwell Landfill contains approximately 1.5 million cubic yards of refuse classified as general household refuse and light industrial waste, and includes an equal volume of natural fill.

In March 1986, the United States Environmental Protection Agency (U.S. EPA) evaluated the Site using the Hazard Ranking System (HRS). A composite score of 35.57 (above the 28.5 threshold for NPL listing) was assigned, with the following scores assigned to each potential route: Surface Water 0.0; Air 0.0; and Groundwater 61.54. The Site was proposed for inclusion on the NPL in the Federal Register, Volume 53, Number 122, dated June 24, 1988. The Site received final listing on the NPL in the Federal Register, Volume 55, Number 35, dated February 21, 1990.

Following the final listing on the NPL, a Remedial Investigation/Feasibility Study (RI/FS) was performed at the landfill. The Final RI Report (Warzyn, 1994) was approved by the U.S. EPA in 1994. The Draft FS Report (Montgomery Watson, 1995) was submitted to the U.S. EPA in 1995.

On March 1, 1996, the U.S. EPA and FPD agreed to an Administrative Order by Consent (AOC), Docket No. V-W-'96-C-341, which specified response actions that the FPD would conduct at the Site. These response actions have been completed, or are part of ongoing Operations & Maintenance (O&M). They include:

- Delineation of the limits of waste at the landfill edges;

- Cap characterization to delineate areas which did not have two feet of low permeability soil over refuse;
- Repair of those portions of the landfill cover that had less than two feet of low permeability soil over refuse;
- Regrading to promote surface water drainage off the landfill;
- Installation of a leachate collection system (LCS);
- Installation of a passive landfill gas (LFG) venting system;
- Treatment of landfill leachate; and
- Monitoring of groundwater and system performance.

On September 30, 1998, the U.S. EPA issued the Record of Decision (ROD) for the Blackwell Landfill. The ROD requires long term O&M of the previously completed response actions, long term monitoring of the monitored natural attenuation of groundwater, and possible augmentation of the LCS and LFG venting systems.

On April 9, 1999, the U.S. EPA issued a Unilateral Administrative Order (UAO), Docket No.V-W-'99-C-541, to the FPD. This UAO directed the FPD to perform the selected remedial action described in the ROD, and set forth the requirements for implementation of the remedial action.

WORK HOURS AND WORK DAYS

The work conducted on the Project will be day shift work. Normal work hours will be from 7:00 AM to 7:00 PM, Monday through Friday. The Forest Preserve is open from one hour after sunrise to one hour after sunset.

SCOPE OF WORK

Many of the U.S. EPA-mandated response actions discussed in Section 2.1 of the SSHP have been completed. However, routine O&M of these response actions are currently ongoing. These monitoring activities include:

- Leachate and LFG system monitoring every two months;
- Groundwater monitoring on a nine month schedule;
- Stewardship of an installed native prairie landscape on a yearly basis; and
- Miscellaneous construction projects on an as-needed basis, such as regarding of the landfill surface and the installation of surface water collection trenches.

This SSHP was written to be applicable to all currently on-going O&M activities, as well as any future construction projects. As such, some of the information provided in this SSHP is not directly applicable to current activities.

UNIQUE SITE CONDITIONS AND ISSUES

The Blackwell Landfill is located in a DuPage County Forest Preserve. As such, there are several unique site conditions and issues:

- Because the Blackwell Forest Preserve is open to the public daily, caution must be taken when driving through the Forest Preserve. Those operating either passenger vehicles or heavy equipment must be aware of Forest Preserve recreational users in order to protect their safety. It is a requirement that the posted speed limits in the Forest Preserve be obeyed.
- The topography of the Blackwell Landfill varies greatly throughout the site. Extreme caution must be taken when performing site activities on steep slopes, especially on the southern portion of the Landfill.
- Because the Landfill is completely open to its surroundings, site issues to consider include biological hazards, thermal stress, and exposure to severe weather conditions. For specific information regarding health and safety monitoring of biological hazards, thermal stress, and exposure to severe weather conditions, refer to Section 6.0 of this SSHP.

ADMINISTRATION

INTRODUCTION

In order to facilitate the implementation of this SSHP and the site safety and health program, it is necessary to assign key responsibilities to specified individuals.

PROJECT TEAM SAFETY CONTACTS

Each project team member has designated a safety contact for the Project. These people should be contacted during any site emergency situation. The safety contacts will act as liaison between the project staff and company management for all safety related issues. Safety contacts and telephone numbers are provided in Attachment A.

PROJECT SAFETY OFFICER

The PSO is responsible for preparing the overall health and safety plan for the Project. The PSO is also responsible for implementing the health and safety procedures, including this SSHP, for all activities associated with the project. The PSO has the authority to stop work

and to remove personnel from the site when their actions are considered dangerous or when their attitude jeopardizes the safe performance of the project.

SITE VISITORS

The PSO or Project Manager may give approval to visitors to enter the Site, after visitors have attended a safety orientation. Visitors are also required to provide their own personal protective equipment (PPE) necessary to provide an adequate level of protection for the purpose of their visit.

INCIDENT INVESTIGATION

Incidents that result in injury and/or loss of equipment or damage to property shall be reported immediately to FPD after providing or obtaining the appropriate medical and emergency assistance. The FPD shall thoroughly investigate the causes of all accidents and take corrective action to prevent their recurrence, whether or not there is an injury. It is the responsibility of the immediate supervisor to investigate and report all accidents that occur in his/her department. Form HR11 "Supervisor's Injury Report" will be filled out and forwarded to the department head for all injuries, even if there is no lost time. All accidents must be reported to your immediate supervisor.

GENERAL TRAINING REQUIREMENTS

INTRODUCTION

Health and safety training is an integral part of the total Project Health and Safety Program. The objectives of such training are to educate workers about the potential health and safety hazards associated with and provide knowledge and skills necessary to minimize risk. The training ensures that workers are informed about the use and limitations of safety and PPE, as well as the proper control measures necessary to prevent injury or illness.

PRE-BURN MEETING

Prior to beginning of the first work shifts, all employees and visitors must receive a site-specific safety orientation given by the FPD. The orientation shall include, but not be limited to:

- Site conditions and safety hazards;
- General safety rules for personal conduct;
- Emergency notification;
- PPE and construction dress wear;
- Radio communication;
- Escape routes;
- Incident reporting; and
- Basic rules for project activities.

Each person participating in the orientation shall acknowledge receipt of these instructions by filling out the Personal Safety and Health Acknowledgment form located in Attachment E. A copy of this acknowledgement shall be forwarded to the PSO to ensure that each site employee has been orientated.

OPERATIONS REQUIREMENTS

The following requirements are unique to this project. In addition to these requirements, all employers shall comply with the requirements as found in this SSHP.

CONSTITUENTS OF POTENTIAL CONCERN

There is a possibility that constituents of potential concern (COPC) may be present in landfill gas that could affect worker's health. The COPCs include:

Landfill Gas: Methane, dichlorodifluoromethane, 1,2-dichloro-1,1,2,2-tetrafluoroethane, vinyl chloride, chloroethane, acetone, methylene chloride, trans-1,2-dichloroethene, cis-1,2-dichloroethene, 1,1-dichloroethane, 2-butanone, 1,1,1-trichloroethane, benzene, toluene, and trichloroethene.

The necessary precaution to prevent employee's exposure to the COPCs will be implemented. This may include administrative and engineering controls or the use of PPE. Exposure routes for the potential contaminants of concern include dermal (eyes, mucus membranes) exposure and inhalation of gases, vapors, at or above the Occupational Safety and Health Administration (OSHA) Permissible Exposure Level (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV), or National Institute for Occupational Safety and Health (NIOSH) published Immediately Dangerous to Life and Health (IDLH) concentrations.

TRAINING REQUIREMENTS

AIR MONITORING REQUIREMENTS

Air monitoring, other than the parameters specifically required for landfill performance monitoring, is not required for routine O&M activities.

PERSONAL PROTECTIVE EQUIPMENT

Effort shall be made to eliminate workplace hazards through the use of engineering controls. However, it is recognized that to effectively control potential hazards, the use of PPE will be required. The initial level of protection for site activities will be level D. Employers will ensure that employees are trained in the use, care, and limitation of PPE. In addition, employers shall ensure the availability, proper use and maintenance of PPE required to safely perform their activities. PPE in use shall be inspected daily and maintained in serviceable condition. Items of personal issue shall be cleaned, sanitized as appropriate, and repaired prior to being reissued to another employee.

ANYONE refusing or repeatedly failing to use the required equipment and/or comply with respective procedural requirements will be dismissed from the project site.

Level D Protective Equipment

Level D is the minimum attire to be worn during activities, and does not suggest any initial respiratory or dermal health hazards. Level D will be worn during all current routine O&M activities. The following list outlines the PPE that will be utilized for Level D.

- Exterior garments: Long pants, shirt with sleeves (no tank tops).
- Foot protection: Safety toed footwear (ANSI Z41), additional steel shank recommended.

Level D-Modified Ensembles

Level D-modified will be worn during activities which do not suggest any respiratory hazards, but where dermal protection is warranted. However, dependent upon the construction activity, not all of the PPE listed below would be required. The exact PPE ensemble to be worn during the project will be determined by the PSO.

Level D-modified ensembles consist of Level D attire with the addition of the following:

- Exterior garments: Nomex pants and shirt or coveralls for Prescription Fire Personnel.
- Eye and face protection: Safety glasses.
Wildland goggle and/or polycarbonate face shield for Prescription Fire Personnel.
- Head protection: Hard hats (ANSI Z89.1)
Nomex full face shroud and NFPA compliant hard hat for Prescription Fire Personnel.
- Glove selection: Leather gloves for Prescription Fire Personnel.
- Foot protection: Leather boots with safety toe and steel shank.
- Hearing protection: Pre-molded earplugs with a NRR of 29dB when working on or near operating equipment or machinery.

SITE CONTROLS

On the day of the burn, the Blackwell Landfill and adjacent portions of the Blackwell Forest Preserve will be shut down to pedestrian traffic and unauthorized personnel. Warning signs

will be placed along major roads located downwind of the landfill, as well as within the entrance road to the Preserve in order to alert the public of the pending burn activities. The Blackwell Forest Preserve will re-open after all fires have been extinguished and the area is deemed by The Burn Coordinator to be safe for public use.

FIRST AID STATION

Each employer on site must make available to his/her employees' first aid services and must make provisions for medical care as required in OSHA. The location of first aid kits will be communicated to site employees. First aid supplies shall be individually sealed and stored in a weatherproof location. The contents of first aid kits are to be checked by the employer before being sent out to the project to ensure that the expended items are replaced.

- Provisions must be made prior to work for prompt medical attention in case of injury.
- Emergency telephone numbers, i.e., physician, hospital, and an ambulance; must be posted and employers must have a means to summon for help (cell phone, radio, other).
- A means for washing/drenching a person exposed to injurious corrosive materials to flush the eyes or body must be provided.

SEVERE WEATHER

If a lightning storm is suspected or observed, all site activities must be stopped, and site equipment must be evaluated for its potential for acting as a lightning rod. Personnel should wait indoors for the storm or lightning event to end. If the strike of lightning occurs and personnel are out in the field, the response should be to disband from one another and lay low to the ground by dropping to your knees and bending forward with your hands wrapped around your knees, away from any poles or trees.

Persons struck by lightning receive a severe electrical shock and may be burned, but they carry no electrical charge and can be handled safely. Someone who appears to have been killed by lightning often can be revived by prompt action. Those unconscious but breathing probably will recover spontaneously. First aid and CPR should be administered as appropriate until medical assistance arrives. Realize that victims who appear to be only stunned or otherwise unhurt also need attention. Check for burns, especially at fingers and toes and next to metal buckles, jewelry, or personal items that the victim is wearing. Remember to treat for shock.

Tornadoes usually develop from thunderstorms and normally occur at the trailing edge of the storm. Most tornadoes occur in the months of April through July in the late afternoon and early evening hours. When storms are predicted for the project areas, monitor weather conditions on a radio. A tornado watch is issued when favorable conditions exist for the development of a tornado. The local weather service office issues a tornado warning whenever a tornado has actually been sighted or is strongly indicated by radar.

If a tornado warning is issued, seek shelter immediately. If there are permanent buildings located on site, go there immediately, moving toward interior hallways or small rooms on the lowest floor. If a tornado warning is issued and you are in a vehicle or a site trailer, leave and go to the nearest building. If there are no buildings nearby, go in the nearest ditch, ravine, or culvert, with your hands shielding your head.

If a tornado is sighted or a warning issued while you are in open country, lie flat in a ditch or depression. Hold onto something on the ground, such as a bush or wooden fence post, if possible. Once a tornado has passed the site, site personnel are to assemble at the designated assembly area to determine if anyone is missing or injured. Administer first aid and seek medical attention as needed.

HEAT STRESS

The stress of working in a hot environment can cause a variety of illnesses including heat exhaustion or heat stroke; the latter can be fatal. Personal protective equipment can increase heat stress significantly. Acclimatization to the heat and work environment can also effect a workers reaction to heat stress. To reduce or prevent heat stress, frequent rest periods and beverage consumption to replace body fluids and salts may be required. It should be noted that heat stress can occur in people wearing regular, permeable work clothing.

Biological monitoring of pulse rate and oral temperature will be conducted whenever when ambient temperature is greater than 81.5 °F as measured by a Wet Globe Bulb Thermometer (WGBT). If a WGBT is not available, begin monitoring at 75 °F and record relative humidity levels reported by local news. If heat stress is observed, the rest schedule will be increased until the effects of heat strain are observed to be reduced.

Workers exposure to heat stress must be discontinued when any of the following occur:

- Sustained heart rate in excess of 180 bpm minus the individual's age in years.
- Body core temperature (measured orally) greater than 100.4 °F.
- Recovery heart rate at one minute after a peak work effort is greater than 110 bpm
- Symptoms of sudden and severe fatigue, nausea, dizziness or lightheadedness.

The following procedures and action levels are to be used for the physiological monitoring of heat stress:

- **Heart rate:** Count the carotid (neck) or radial (inner wrist) pulse during a 30-second period as early as possible in the rest period. If the heart rate exceeds 110 beats per minute at the beginning of the rest period, shorten the next work cycle 25% and increase the rest period by 25%. If the heart rate exceeds the 110 beats per minute at the next rest period, shorten the following work cycle by another 25% and also monitor oral temperature and pulse rate.

Oral Temperature: Use an oral thermometer (this must be done outside of the support zone) to measure the body core temperature at the end of the work period (before

drinking). If body core temperature exceeds one degree higher than the individual's resting body core temperature, shorten the next work cycle by 25% and increase rest period by 25%. If body core temperature exceeds 1 °F elevation at the beginning of the next rest period, shorten the following work cycle by 25%. **DO NOT** allow a field team member to wear heavy or impervious clothing when body core temperature exceeds one degree of elevation.

Personnel will be trained to recognize the symptoms of heat stress and the appropriate action to take upon recognition. Even though physiological monitoring is not always necessary, it is essential that personnel understand the significance of heat stress and its recognition.

Some of the symptoms that indicate heat exhaustion are:

- Clammy skin
- Lightheadedness
- Slurred speech
- Rapid pulse
- Weakness, fatigue
- Confusion
- Fainting
- Nausea (vomiting)

If these conditions are noted, the following steps should be taken:

- Remove the victim to a cool and uncontaminated area
- Remove protective clothing
- Give water to drink, if conscious.

Symptoms that indicate heat stroke include:

- Staggering gait
- Hot skin, temperature rise (yet may feel chilled)
- Incoherent, delirious
- Mental confusion
- Convulsions
- Unconsciousness

If heat stroke conditions are noted, immediately perform the following steps:

- Remove victim to a cool, uncontaminated area
- Cool the victim, whole body, with water, compresses and/or rapid fanning
- Give water to drink, if conscious
- Transport the victim to the designated medical facility for further cooling and monitoring of body functions. **HEAT STROKE IS A MEDICAL EMERGENCY!**

APPENDIX D

Field Sampling Plan Addendum #8

FIELD SAMPLING PLAN ADDENDUM NO. 8
PHASE I PRAIRIE RESTORATION PLAN POST-BURN MONITORING
BLACKWELL LANDFILL NPL SITE
FOREST PRESERVE DISTRICT OF DUPAGE COUNTY

PURPOSE

Following the prairie burn, after the Burn Coordinator deems that the fire has successfully been extinguished, MWH, Forest Preserve District of DuPage County (FPD), and prairie restoration subcontractor (Conservation Design Forum [CDF]) personnel will conduct a site inspection to determine the effect of the prairie burn on the landfill. The purpose of this Field Sampling Plan (FSP) Addendum is to describe the activities that will be utilized to evaluate the effect, if any, of the prairie burn on the remedial structures located throughout the landfill.

ACTIVITIES TO BE CONDUCTED FOLLOWING THE BURN

The following activities will be conducted:

- MWH and FPD – evaluate the effect of the burn on the landfill remedial system components to determine if the prairie burn damaged the leachate collection system (LCS) and landfill gas (LFG) systems and their associated components. MWH and FPD will utilize the procedures described below to conduct the evaluation.
- CDF – evaluate the effect of the burn on the prairie vegetation on the landfill to determine if the burn met the specified objectives in the Phase I Restoration Plan. CDF will utilize industry-standard field procedures to conduct the burn evaluation; these procedures are not included within this FSP Addendum. At the completion of the field evaluation, CDF will provide a summary report that describes the overall success rate of the prairie burn.

FIELD EVALUATION PROCEDURES

Necessary Supplies:

- Copy of October 2003 Safety and Health Plan and Emergency Response Procedures
- Copy of this Field Sampling Addendum and all attachments
- Pen
- Cell phone or other two-way communications device
- Camera (digital or film-loaded)
- Steel-toed boots
- Safety glasses with sideshields
- Nitrile or latex gloves
- Photoionization Detector (PID)
- Combustible Gas Indicator (Landtec GA-90 or equivalent)

In order to evaluate the effect of the prairie burn on the remedial components of the Blackwell Landfill, it will be necessary to assess the condition of each component immediately after the completion of the burn. Utilizing Figure 1 and Table 1, each remedial component will be evaluated through the following:

1. Approach each component with caution. Note any obviously visible damage to the component, such as melted vault covers or damaged drip leg piping. Take readings with a PID and combustible gas indicator first in the breathing zone as the vault/vent is approached, and then at vault/vent level as the structure is reached. If the damage has resulted in LFG emissions, note the emissions and stop work. Refer to the October 2003 *Safety and Health Plan and Emergency Response Procedures* for the appropriate level of personal protective equipment (PPE) required based on the readings. Continue to Step #2 once the appropriate level of PPE has been donned. If the levels detected warrant a stoppage of work, immediately leave the location and notify both the FPD Field Technician (Ray Babowice) and MWH Project Managers (Peter Vagt and David Powers). Note the instrument readings on Table 1.
2. Photograph the conditions of the outside of the remedial component (i.e., vault/vent cover). Make general observations on the outside of the component on Table 1.
3. Open the vault/vent. Photograph the condition of the inside of the remedial component. Inspect the inside of the vault/vent for any damage caused by the prairie burn. Note observations on the inside of the component on Table 1.
4. Close the vault/vent and continue to next location.
5. At the completion of the evaluation, report any damaged components to both the FPD Field Technician (Ray Babowice) and the MWH Project Managers (Peter Vagt and David Powers). If no damage is reported, FPD will be cleared to initiate operation of the LCS and LFG systems. If damage to any of the remedial components is noted, the damage must be repaired and inspected prior to the LCS and/or LFG systems are operated.

APPENDIX E

**Burn Plan Guidelines
(March 2012)**

BURN PLAN GUIDELINES
March 2012
Blackwell Forest Preserve Landfill
DuPage County, Illinois

Site Fire Constraints:

1. Leachate Extraction Wells and Gas Vents:

Most of the leachate collection, landfill gas venting, and monitoring systems on the Blackwell Landfill are located underground in vaults constructed flush with the ground surface. The exception is the main landfill vent stack located on the top of Mount Hoy.

Prior to the controlled burn, all sources of landfill gas on the Blackwell Landfill must be shut off a minimum of 10 minutes prior to initiation of the controlled burn. All valves on gas vents, leachate extraction wells and the vent stack will be closed, and will not be re-opened until the burn is complete. The leachate collection system on the Blackwell Landfill will also be temporarily shut down a minimum of 10 minutes prior to initiation of the controlled burn and will remain off until the Burn Coordinator deems the burn is complete.

Vegetation within a six-foot radius of vaults and other appurtenances will be mowed prior to the burn day to minimize fuel loading.

2. Trees:

Trees grow on the Blackwell Landfill at various locations. In addition, large groves of trees grow around the landfill in the surrounding forest preserve. Selected trees must be protected during the controlled burn. As needed, a six-foot buffer may be mowed prior to the burn day or cut around trees or groves of trees to minimize fuel loading.

3. Tubing Run:

The grasses on the tubing run located north of Mount Hoy are not included in the controlled burn. In addition, the tubing kiosk located on the north side of the landfill must be protected by mowing or cutting vegetation in a six-foot buffer around the kiosk.

Burn Schedule and Weather Conditions

The prescribed burn should be scheduled to occur from late February through early April. The actual burn day will depend upon weather conditions. Spring burns allow the prairie vegetation to remain as cover for wildlife during the winter months, as well as provide for visual interest to the landscape.

A report on the on-site weather must be obtained one hour prior to the burn and as necessary during the burn if weather conditions change. At no time should a burn be conducted if the

weather conditions exceed the following established burn parameters. Burning will only take place under the following weather conditions:

Air Temperature	35 – 70°F
Relative Humidity	25 – 70%
Wind Direction	generally from west
Wind Speed	5 – 15 mph

Crew Organization and Equipment:

The burn crew will contain a qualified fire leader as well as several additional support members. The fire leader shall be trained to meet National Wildfire Coordinating and Group standards. All participants should be outfitted with Nomex coveralls, hard hats, goggles and leather gloves. Necessary burn equipment includes the following: water pumper, drip torches, fire rakes, flappers, water packs, all-terrain vehicle with water capabilities, and a mop-up tool set. Additional items of importance include a first aid kit, portable radios, cellular phones, and drinking water.

Fire and Smoke Management:

The following conditions apply to the prescribed burn:

1. The prescribed burn will comply with all conditions outlined in the IEPA Open Burning Permit (see attached).
2. The Burn Coordinator shall obtain local permits, as needed.
3. The Burn Coordinator shall develop a Health and Safety Plan for the protection of workers and the public.
4. On the day of the prescribed burn, notification will be given to the Warrenville Fire Department, Forest Preserve District of DuPage County Law Enforcement and Rangers, the DuPage County Sheriff, local police departments, and DUCOMM (a shared county-wide emergency response network).
5. In accordance with the IEPA Open Burning Permit, residences and businesses that may be affected by the burn will be notified prior to the burn. An example of the letter that is sent to adjacent municipalities and residences, as well as the contact list developed specifically for controlled burns to be conducted on the Blackwell Landfill, are provided as attachments to this Burn Plan. The U.S. EPA will be notified a minimum of 14 days in advance of the prescribed burn.
6. On the day of the burn, the Blackwell Landfill and adjacent portions of the Blackwell Forest Preserve will be shut down to pedestrian traffic and unauthorized personnel.

Warning signs will be placed along major roads located downwind of the landfill, as well as within the entrance road to the Preserve in order to alert the public of the pending burn activities. The Blackwell Landfill and adjacent portions of the Blackwell Forest Preserve will re-open after all fires have been extinguished and the area is deemed by the Burn Coordinator to be safe for public use.

7. The project area is divided into 4 burn units as shown on Exhibit A. Each unit will be burned one at a time.
8. Within each burn unit, backfires will be set to blacken the upslope or downwind portions of the landscapes. If weather conditions allow, headfires will be set once the backfires are established.
9. The resulting smoke from the burn will be minimized by burning during the daytime when the wind is such that smoke can be dispersed safely away from smoke sensitive areas.
10. Hand crews with flappers and water packs will be staged along firebreaks to suppress any fire threatening to escape the designated burn area.
11. Ignition should be conducted using a ring-headfire pattern and possibly employing strip ignition as well. Two crews should proceed in opposite directions from a common starting point. The initial ignition should include backfiring and flanking until safe burn out zones have been achieved at which time headfire ignition may be conducted.

JEF/PJV

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APPENDIX F

Day of Burn Documentation

Pre-Burn Checklist				
		Yes	No	Notes
1	Are all valves on LFG vents, LCS extraction wells and main vent stack closed? Have they been closed for a minimum of 10 minutes prior to start of burn?	✓		
2	Was the six-foot buffer mowed around landfill appurtenances?	✓		IN THE FALL OF 2011
3	Was on-site weather report obtained one hour prior to the burn?	✓		
4	Are weather conditions within ranges established to conduct the burn?	✓		
5	Has the burn crew read and signed the HASP acknowledgement form?	✓		
6	Does the burn crew have all the training required by the FPD in order to conduct the burn?	✓		
7	Does the burn crew have all necessary health and safety equipment?	✓		
8	Does the burn crew have all necessary equipment with which to conduct the burn?	✓		
9	Has 24 hour burn notification been given to all necessary parties?	✓		
10	Have all conditions of the IEPA burn permit been satisfied prior to the burn?	✓		
11	Has the area around the landfill been secured to protect the public during the burn?	✓		

Additional Information		
1	How will we be notified that the burn is complete and post-burn monitoring of the landfill can begin?	HERMAN JENSEN (DISTRICT) WILL NOTIFY WHEN COMPLETE.
2	Where should observers be located during the burn?	UPWIND AND AWAY FROM THE BURN - PREFERABLY ON THE OUTSKIRTS OF THE LANDFILL.

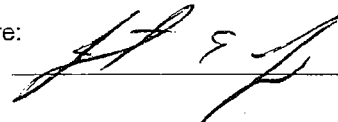
Name:

JUSTIN FINGER

Date:

4/5/12

Signature:



Burn Unit: BLBU07
Preserve Name: Blackwell, R.C.
Unit Name: Mt. Hoy Prairie
Sector: West

Wind Direction: NE - W (range is clockwise)
Wind Speed: 20 ft. wind speed = 5-15 /
Parameters: Midflame wind speed = 2-6

Mowed Firebreak Required: ☒

Acreage: 9.2
Perimeter (ft): 2884.7
Vegetation Type: Prairie
Min. Crew Size: 8

Comments/Hazards: Spring only.

<u>Fire Department</u>	<u>Permit Req'd</u>	<u>Status</u>
Warrenville FPD	No	
West Chicago FPD	No	
Winfield	No	

Contact List

(630) unless
otherwise noted

Contact Type	Em. Assist. Type	Contact Name/Organization	Phone #	Contact Person
Em. Assist.	Fire	Warrenville FD	393-1381	S. of Mack
	Fire	West Chicago FD	231-2123	N. of Mack
	Law Enforcement	FPD Dispatch	933-7240	
	Medical	FPD Dispatch	933-7240	
Fax Notif.		DuComm	665-4893	
		DuPage Sheriff	407-2380	
		DuPage Sheriff	407-2380	
		FPD Dispatch	933-7241	
		FPD Visitor Services	933-7217	
		G&R Nursery	231-0979	
		Warrenville FD	393-4608	S. of Mack
		West Chicago FD	231-2122	N. of Mack
		West Sector	876-5939	
		Carl Deitrick	847-742-9256	Steward (Kame)
Phone Notif.		Currier School	293-6600	Prin. Vicky Zamillo
		Dave Powers	312-831-3432	landfill only
		Drew Bergenthal	462-5655 or	708-917-7651 - landfill only
		DuComm	690-8245	
		DuComm	690-8245	
		DuPage Sheriff	407-2400	
		Erik Neidy	726-6984	
		FPD Dispatch	933-7230	
		G&R Nursery	876-5920	Peg
		Gary Berthiaume	393-3449	Bluebird monitor (spring;McKee area)
		Joe Benedict	738-2088	landfill only
		John & Shelley Landman	876-1493	Bluebird monitor (spring;McKee area)
		Ken Johnson (CDF)	640-2169	landfill only
		Mark Donnelly & Veta Bonnewell	393-4412	Amph. Monitor (spring)
		MWH	312-831-3466	Peter Vagt; landfill only
		Ray Babowice	710-0127	landfill only
		Structural Maint.	876-5910	
		Visitor Services	871-6419	
		Warrenville FD	393-1381	
		West Chicago FD	231-2123	
		West Sector	876-5931	Staff asst.
		Francine Manilow	231-1477	or 312-819-0050; near dog area
		Heather Allchin	201-6071	Near Mack/Winfield Rds.
		Irena Mickle	871-6195	S side of preserve
		Nora O'Hare	665-0233	SE side of preserve

Pre-burn call time: _____

Post-burn call time: _____

History for Chicago DuPage, IL

Thursday, April 5, 2012

Thursday, April 5, 2012

[« Previous Day](#)

April

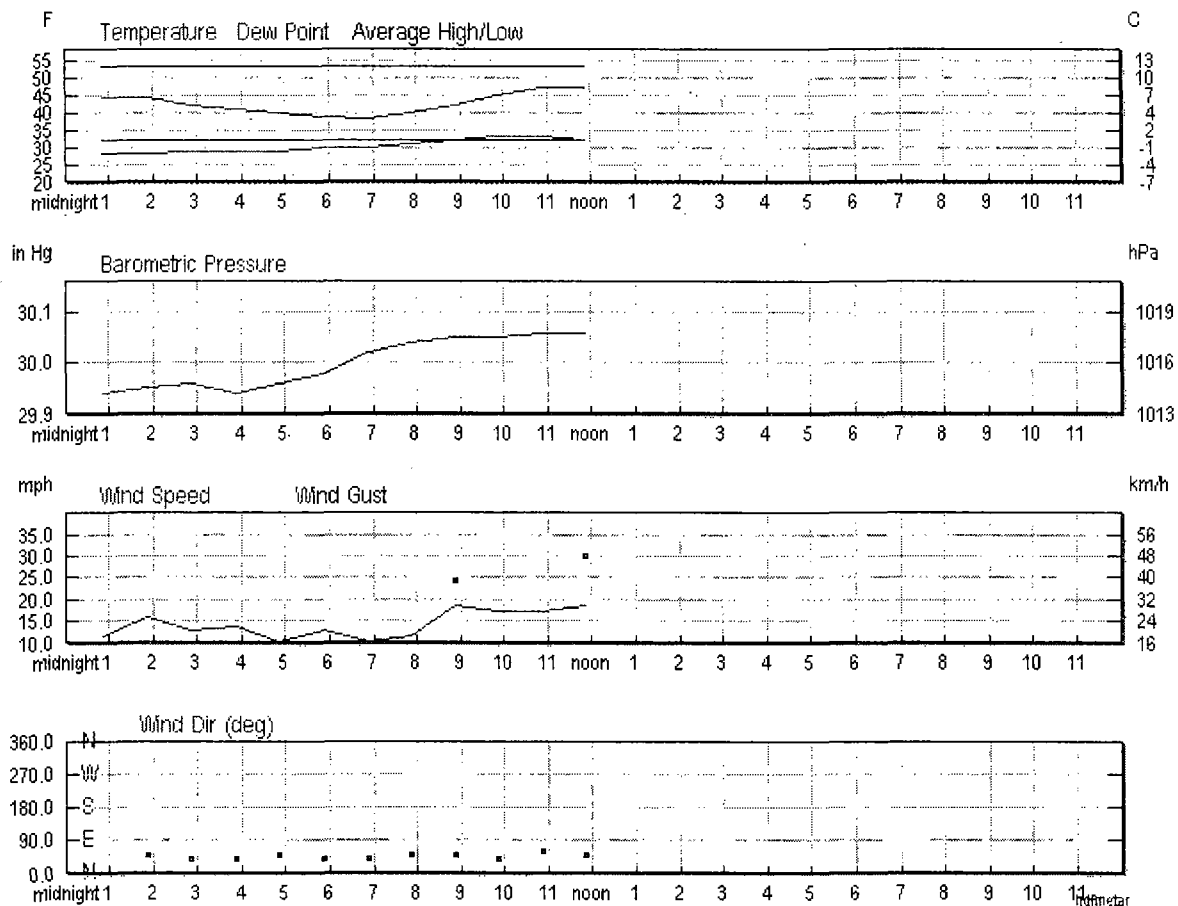
5

2012

[View](#)[Next Day »](#)[Daily](#)[Weekly](#)[Monthly](#)[Custom](#)

	Actual	Average	Record
Temperature			
Mean Temperature	42 °F	-	
Max Temperature	46 °F	57 °F	76 °F (2005)
Min Temperature	37 °F	34 °F	21 °F (2002)
Degree Days			
Heating Degree Days	24		
Moisture			
Dew Point	30 °F		
Average Humidity	63		
Maximum Humidity	73		
Minimum Humidity	53		
Precipitation			
Precipitation	0.00 in	-	- ()
Sea Level Pressure			
Sea Level Pressure	30.00 in		
Wind			
Wind Speed	11 mph ()		
Max Wind Speed	18 mph		
Max Gust Speed	30 mph		
Visibility	10.0 miles		
Events			

T = Trace of Precipitation, **MM** = Missing Value**Source:** Averaged Metar Reports



Certify This Report

Hourly Observations

Time (CDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust
12:52 AM	44.1 °F	38.1 °F	28.0 °F	53%	29.94 in	10.0 mi	NE	11.5 mph	-
1:52 AM	44.1 °F	36.8 °F	28.0 °F	53%	29.95 in	10.0 mi	NE	16.1 mph	-
2:52 AM	42.1 °F	35.2 °F	28.9 °F	60%	29.96 in	10.0 mi	NE	12.7 mph	-
3:52 AM	41.0 °F	33.5 °F	28.9 °F	62%	29.94 in	10.0 mi	NE	13.8 mph	-
4:52 AM	39.9 °F	33.4 °F	28.9 °F	65%	29.96 in	10.0 mi	NE	10.4 mph	-
5:52 AM	39.0 °F	31.4 °F	30.0 °F	70%	29.98 in	10.0 mi	NE	12.7 mph	-
6:52 AM	37.9 °F	30.9 °F	30.0 °F	73%	30.02 in	10.0 mi	NE	10.4 mph	-
7:52 AM	39.9 °F	32.9 °F	30.9 °F	70%	30.04 in	10.0 mi	NE	11.5 mph	20.7 m
8:52 AM	42.1 °F	33.6 °F	32.0 °F	67%	30.05 in	10.0 mi	NE	18.4 mph	24.2 m

Show full METARS | METAR FAQ | Comma Delimited File



Time (CDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust S
9:52 AM	45.0 °F	37.6 °F	33.1 °F	63%	30.05 in	10.0 mi	NE	17.3 mph	-
10:52 AM	46.9 °F	-	33.1 °F	59%	30.06 in	10.0 mi	ENE	17.3 mph	24.2 m
11:52 AM	46.9 °F	-	32.0 °F	56%	30.06 in	10.0 mi	NE	18.4 mph	29.9 m

[Show full METARS](#) | [METAR FAQ](#) | [Comma Delimited File](#)



APPENDIX G



Photographic Log of Prairie Burn



Customer:	Forest Preserve District of DuPage County	Project Number:	1007333
Site Name:	Blackwell Landfill NPL Site	Site Location:	Warrenville, Illinois



Photograph ID: 1 Date: Apr 5, 2012 Location: Blackwell Landfill Direction: South Comments: North side of landfill prior to conducting the controlled burn.	
Photograph ID: 2 Date: Apr 5, 2012 Location: Blackwell Landfill Direction: Southeast Comments: Northeast side of landfill prior to conducting the controlled burn.	

Customer:	Forest Preserve District of DuPage County	Project Number:	1007333
Site Name:	Blackwell Landfill NPL Site	Site Location:	Warrenville, Illinois



Photograph ID: 3 Date: Apr 5, 2012 Location: Blackwell Landfill Direction: Northwest Comments: Northern portion of landfill prior to conducting the controlled burn (at toe of toboggan run).	
Photograph ID: 4 Date: Apr 5, 2012 Location: Blackwell Landfill Direction: West Comments: East side of landfill prior to conducting the controlled burn.	

Customer:	Forest Preserve District of DuPage County	Project Number:	1007333
Site Name:	Blackwell Landfill NPL Site	Site Location:	Warrenville, Illinois
Photograph ID: 5			
Date: Apr 5, 2012			
Location: Blackwell Landfill			
Direction: Southeast			
Comments: East side of landfill prior to conducting the controlled burn.			
Photograph ID: 6			
Date: Apr 5, 2012			
Location: Blackwell Landfill			
Direction: South			
Comments: Conducting burn on eastern slope of Mt. Hoy, south of access road.			


Customer:	Forest Preserve District of DuPage County	Project Number:	1007333
Site Name:	Blackwell Landfill NPL Site	Site Location:	Warrenville, Illinois
Photograph ID: 7			
Date: Apr 5, 2012			
Location: Blackwell Landfill			
Direction: Southeast			
Comments: Conducting burn on eastern slope of Mt. Hoy, south of access road.			
Photograph ID: 8			
Date: Apr 5, 2012			
Location: Blackwell Landfill			
Direction: Southeast			
Comments: Conducting burn on eastern slope of Mt. Hoy, south of access road.			


Customer:	Forest Preserve District of DuPage County	Project Number:	1007333
Site Name:	Blackwell Landfill NPL Site	Site Location:	Warrenville, Illinois
Photograph ID: 9			
Date: Apr 5, 2012			
Location: Blackwell Landfill			
Direction: South			
Comments: Conducting burn on eastern slope of Mt. Hoy, south of access road.			
Photograph ID: 10			
Date: Apr 5, 2012			
Location: Blackwell Landfill			
Direction: East			
Comments: Conducting burn on northern slope of Mt. Hoy.			

Customer:	Forest Preserve District of DuPage County	Project Number:	1007333
Site Name:	Blackwell Landfill NPL Site	Site Location:	Warrenville, Illinois


Photograph ID: 11 Date: Apr 5, 2012 Location: Blackwell Landfill Direction: West Comments: Conducting burn on northeastern slope of Mt. Hoy.	
Photograph ID: 12 Date: Apr 5, 2012 Location: Blackwell Landfill Direction: Southwest Comments: Conducting burn on eastern slope of Mt. Hoy, near EW-7.	


Customer:	Forest Preserve District of DuPage County	Project Number:	1007333
Site Name:	Blackwell Landfill NPL Site	Site Location:	Warrenville, Illinois

Photograph ID: 13	
Date: Apr 5, 2012	
Location: Blackwell Landfill	
Direction: Southeast	
Comments: Conducting burn on eastern slope of Mt. Hoy, north of access road.	


Photograph ID: 14	
Date: Apr 5, 2012	
Location: Blackwell Landfill	
Direction: Southeast	
Comments: Conducting burn on northeastern slope of Mt. Hoy.	


Customer:	Forest Preserve District of DuPage County	Project Number:	1007333
Site Name:	Blackwell Landfill NPL Site	Site Location:	Warrenville, Illinois

Photograph ID: 15	
Date: Apr 5, 2012	
Location: Blackwell Landfill	
Direction: Northwest	
Comments: Conducting burn on northern portion of landfill at the base of the toboggan run.	



Photograph ID: 16	
Date: Apr 5, 2012	
Location: Blackwell Landfill	
Direction: Northwest	
Comments: Conducting burn on northern portion of landfill at the base of the toboggan run.	

Customer:	Forest Preserve District of DuPage County	Project Number:	1007333
Site Name:	Blackwell Landfill NPL Site	Site Location:	Warrenville, Illinois



Photograph ID: 17	
Date: Apr 5, 2012	
Location: Blackwell Landfill	
Direction: Northwest	
Comments: Conducting burn on northern portion of landfill at the base of the toboggan run.	

Photograph ID: 18	
Date: Apr 5, 2012	
Location: Blackwell Landfill	
Direction: East	
Comments: Burned area on eastern slope of Mt. Hoy, south of access road.	

Customer:	Forest Preserve District of DuPage County	Project Number:	1007333
Site Name:	Blackwell Landfill NPL Site	Site Location:	Warrenville, Illinois

Photograph ID: 19 Date: Apr 5, 2012 Location: Blackwell Landfill Direction: East Comments: Burned area on northeastern slope of Mt. Hoy.	
Photograph ID: 20 Date: Apr 5, 2012 Location: Blackwell Landfill Direction: Northeast Comments: Burned area on northern slope of Mt. Hoy.	

Customer:	Forest Preserve District of DuPage County	Project Number:	1007333
Site Name:	Blackwell Landfill NPL Site	Site Location:	Warrenville, Illinois

Photograph ID: 21 Date: Apr 5, 2012 Location: Blackwell Landfill Direction: North Comments: Burned area on northern portion of landfill at the base of the toboggan run.	
Photograph ID: 22 Date: Apr 5, 2012 Location: Blackwell Landfill Direction: West Comments: Burned area on northern portion of landfill at the base of the toboggan run.	

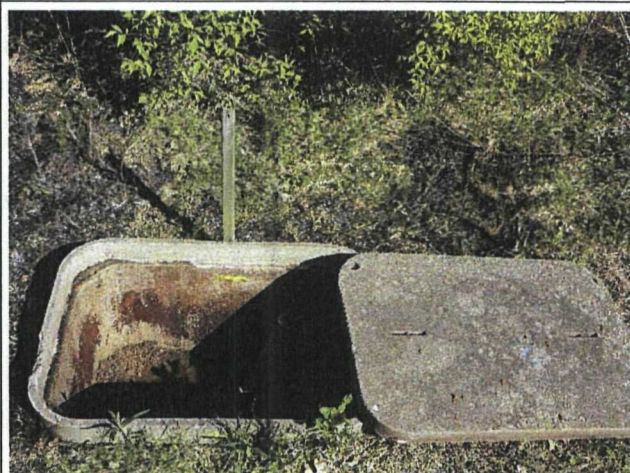
APPENDIX H

Photographic Log of Vent Structures

Client: Forest Preserve District of DuPage County
Project Number: 1007333
Project Name: Blackwell Landfill NPL Site
Site Location: Warrenville, Illinois

Photo 1
Apr 5, 2012
SV-1

Photo 2
Apr 5, 2012
SV-2

Photo 3
Apr 5, 2012
SV-4

Photo 4
Apr 5, 2012
SV-5

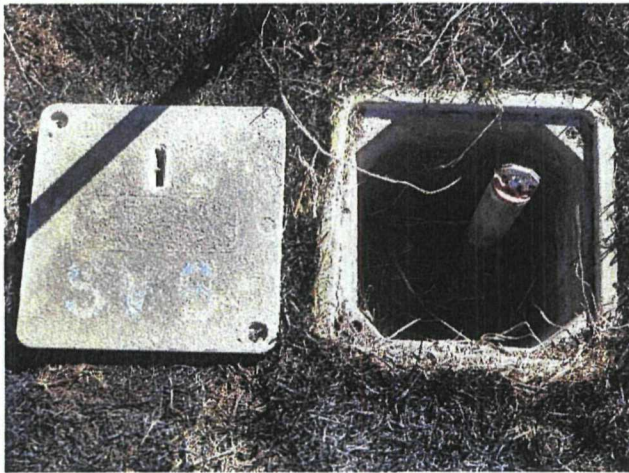
Client: Forest Preserve District of DuPage County
Project Number: 1007333
Project Name: Blackwell Landfill NPL Site
Site Location: Warrenville, Illinois

Photo 5
Apr 5, 2012
SV-6

Photo 6
Apr 5, 2012
SV-7

Photo 7
Apr 5, 2012
SV-8

Photo 8
Apr 5, 2012
SV-9

Client: Forest Preserve District of DuPage County
Project Number: 1007333
Project Name: Blackwell Landfill NPL Site
Site Location: Warrenville, Illinois


Photo 9

Apr 5, 2012

SV-11



Photo 10

Apr 5, 2012

SV-12



Photo 11

Apr 5, 2012

DV-3



Photo 12

Apr 5, 2012

DV-4

Client: Forest Preserve District of DuPage County
Project Name: Blackwell Landfill NPL Site

Project Number: 1007333
Site Location: Warrenville, Illinois



Photo 13

Apr 5, 2012

DV-5



Photo 14

Apr 5, 2012

DV-6



Photo 15

Apr 5, 2012

DV-7



Photo 16

Apr 5, 2012

DV-8

Client: Forest Preserve District of DuPage County
Project Number: 1007333
Project Name: Blackwell Landfill NPL Site
Site Location: Warrenville, Illinois


Photo 17

Apr 5, 2012

DV-9



Photo 18

Apr 5, 2012

DV-10



Photo 19

Apr 5, 2012

DV-11



Photo 20

Apr 5, 2012

DV-13

Client: Forest Preserve District of DuPage County
Project Number: 1007333
Project Name: Blackwell Landfill NPL Site
Site Location: Warrenville, Illinois


Photo 21

Apr 5, 2012

DV-14



Photo 22

Apr 5, 2012

DV-15



Photo 23

Apr 5, 2012

DV-16



Photo 24

Apr 5, 2012

DV-17

Client: Forest Preserve District of DuPage County
Project Name: Blackwell Landfill NPL Site

Project Number: 1007333
Site Location: Warrenville, Illinois



Photo 25

Apr 5, 2012

DV-18



Photo 26

Apr 5, 2012

EW-1



Photo 27

Apr 5, 2012

EW-1A



Photo 28

Apr 5, 2012

EW-2

Client: Forest Preserve District of DuPage County

Project Number: 1007333

Project Name: Blackwell Landfill NPL Site

Site Location: Warrenville, Illinois



Photo 29

Apr 5, 2012

EW-3



Photo 30

Apr 5, 2012

EW-4



Photo 31

Apr 5, 2012

EW-5

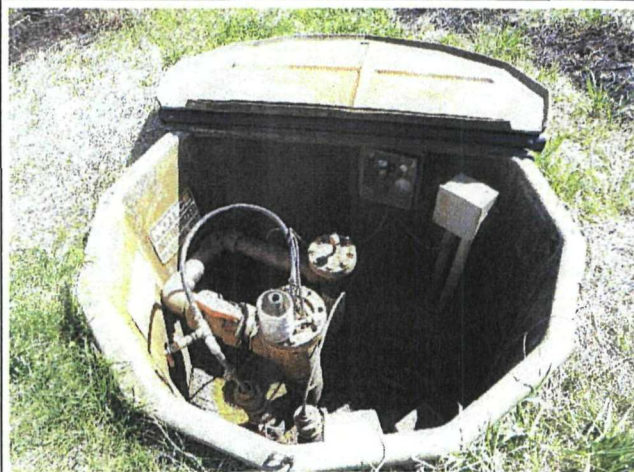


Photo 32

Apr 5, 2012

EW-6

Client: Forest Preserve District of DuPage County
Project Number: 1007333
Project Name: Blackwell Landfill NPL Site
Site Location: Warrenville, Illinois

Photo 33
Apr 5, 2012
EW-7

Photo 34
Apr 5, 2012
EW-8

Photo 35
Apr 5, 2012
Landfill Gas Stack

Photo 36
Apr 5, 2012
LS-01

Client: Forest Preserve District of DuPage County
Project Number: 1007333
Project Name: Blackwell Landfill NPL Site
Site Location: Warrenville, Illinois

Photo 37
Apr 5, 2012
LS-03

Photo 38
Apr 5, 2012
DL-01

Photo 39
Apr 5, 2012
MH-20

APPENDIX I

Post-Burn Monitoring Report



Conservation Design Forum

Landscape Architecture • Planning • Civil / Water Resources Engineering • Sustainable Urbanism • Ecosystem Sciences

FIELD REPORT

DATE: APRIL 12TH, 2012
TO: JUSTIN FINGER - MWH
FROM: KEN JOHNSON – CONSERVATION DESIGN FORUM
SITE: BLACKWELL PRAIRIE - WARRENVILLE, IL
RE: CONTROLLED BURN
REF: CDF PROJECT NO. 11036.00; 2012.04.12 POST-BURN FIELD REPORT
CC: FILE

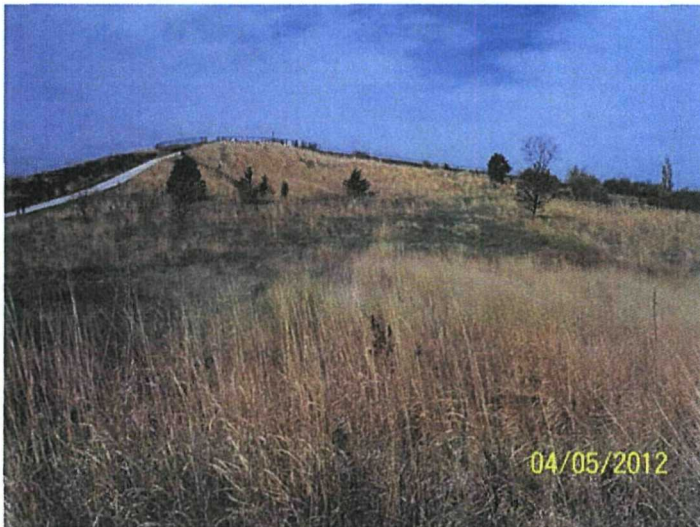
COMMENTS:

The following summarizes my observations of the controlled burn that occurred at Blackwell Prairie on Thursday, April 5th, 2012:

- This was the earliest time (April 5th) to date the prairie has been burned. That stated, however, the unusually mild weather (record warmth since early March) and mild winter made for what has been typical vegetation conditions for the controlled burn.
- Related to the first bullet item, many portions of the site could not carry a fire; in particular, these include the back slopes and the northwestern portions of the landscape.
- The eastern portion of the site and the north portion (north of the toboggan run)—areas where there is plenty of standing fuel—burned well.
- Overall, approximately two-thirds of the prairie landscape burned.

The burn crew of the DuPage County FPD conducted a safe and professional controlled burn. Some photographs of the event are included on the following pages.

Kenneth Johnson
Botanist/Restoration Ecologist
Direct line 630.559.2010
kjohnson@cdfinc.com



Before ...



Before ...



After ...



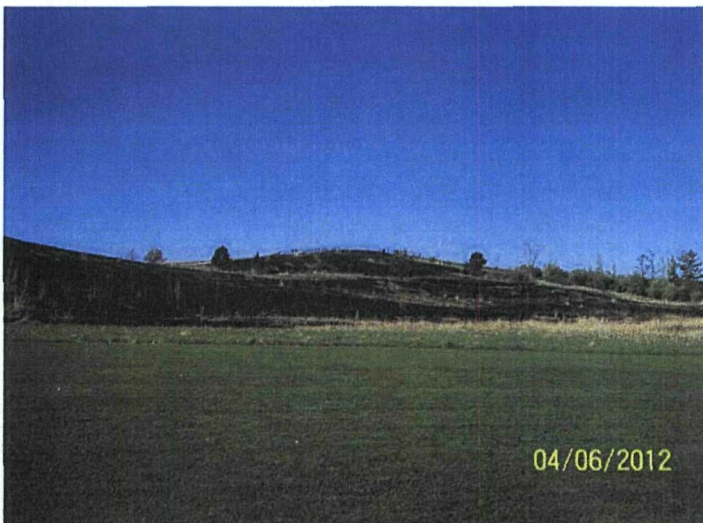
After ...



Before ...



Unburned prairie northwest of toboggan hill



After ...



Burn crew

Blackwell Prairie controlled burn [4/5/2012]